

Turning first to the objections of record, Claims 4, 12 and 13 stand objected to, under 37 C.F.R. §1.75(c), as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim.

The objection to Claims 4, 12 and 13 is well taken. As such, these claim have been cancelled and have been redrafted in a form wherein there are no multiply dependent claims. Applicant avers that all the claims currently in this application are free of objection under 37 C.F.R. §1.75(c).

The second objection included in the outstanding Official Action is directed to Claim 3. Claim 3 is objected to insofar as the recited ranges of the molar ratio are set forth in European style, wherein commas are included to represent decimal points. Claim 3 has been redrafted, as new Claim 16, wherein the ratio of copper to halogen is recited to be in the range of between 1:1.5, rather than the objected to 1:1,5. As such, this objection is overcome.

The formal grounds of rejection are directed to Claims 5, 6 and 11 which stand rejected under 35 U.S.C. §101 and 35 U.S.C. §112, second paragraph. The subject matter rejection, under 35 U.S.C. §101, is based on the non-subject matter nature of a “use.” The rejection under 35 U.S.C. §112, second paragraph is predicated upon the absence of any method or process step delimiting how the use is actually practiced.

The limitations of Claims 5, 6 and 11 have been replaced with new Claim 21-23 which recites a process in the preamble as the subject of these claims. The characterizing portion of these claims include processing steps. As such, the basis for rejection of these claims, under 35 U.S.C. §§101 and 112, second paragraph, are overcome insofar as a process is proper subject matter and the claimed process includes at least one positive step delimiting the operation of that process.

All the claims examined in the merits have been rejected on substantive grounds. That is, the claims examined on the merits, Claims 1-3 and 5-11, stand rejected, under 35 U.S.C. §103(a), as being unpatentable over U.S. Patent 3,428,597 to Dikotter et al. in view of U.S. Patent 3,507,833 to Nentwig et al.

Dikotter et al. is applied for its disclosure of stabilizing a polyamide with a complex compound of cuprous iodide and a hydrocarbon phosphine or hydrocarbon phosphite compound. The Official Action, however, admits that the system employed to stabilize polyamides in Dikotter et al. does not disclose or suggest the use of an organic halogen compound.

To overcome this critical deficiency in Dikotter et al., the Official Action applies, as a secondary reference, the Nentwig et al. patent. Nentwig et al. is applied for its disclosure of stabilizing a polyamide composition with copper and a halogenated phosphite additive. The Official Action concludes it would be obvious to add, an aliphatic phosphite compound containing one or more halogen atoms, as disclosed by Nentwig et al., to the stabilized composition of Dikotter et al. to enhance stabilization of a polyamide against discolorization caused by exposure of the polyamide to elevated temperature in the presence of an oxidizing agent, e.g. air or oxygen.

The rejection of record, at best, presents a *prima facie* case of obviousness insofar as the teaching of the prior art discloses the use of the two components of the stabilizer composition of the present application as separate stabilizing additives. The presumption is that if both of the stabilizers are disclosed in the prior art, it would be obvious to combine them in a stabilizer composition.

It is well established that a presumption of obviousness created by two applied references, can be overcome by a showing of unexpected results. Applicants submit that the working examples included in the specification of the present application include examples which establish unexpectedly improved results, obtained by utilizing the two known stabilizers to produce a stabilizer composition, over the individual stabilizing effects of the individual components.

Attention is directed to the experiments summarized in Table 1 of the specification of the present application. Therein Experiments 3 and 4 illustrate the utilization of an organic halogen compound alone as a stabilizer for a polyamide. Experiment 3 utilizes potassium bromide, an inorganic halogen compound, in combination with a copper compound, copper acetate, which produces an organic halogen. Example 4 illustrates another combination, copper stearate with potassium iodide, to produce an organic halogen compound.

As set forth in Table 1, the polyamide product of Experiment 3, after treatment with this stabilizer system, maintains an undesirable light blue color. Similarly, the polyamide composition product of Experiment 4 is discolored by a blue green color. Moreover, when a copper complex was utilized as the sole stabilizer, as in Experiment 6, which utilized a copper complex stabilizer formed by mercaptobenzimidazole (MBI) and cupric chloride, the polyamide composition retained a yellowish color.

On the other hand, Examples 7 and 8, which utilized a combination of a copper complex and an organic halogen compound, in accordance with the claims of the present application, e.g. the product of triphenylphosphate and copper iodide (TPP-CuJ) in combination with tris(tribromoneopentyl)phosphate (Phospat 1) and the product of triphenylphosphate and copper iodide (TPP-CuJ) in combination with polydibromostyrene

(PDBS), respectively, within the scope of the present invention, produced a polyamide product that was almost colorless.

This showing evidences a rebuttal of any presumption of obviousness presented by the applied references. Reconsideration of the substantive ground of rejection is therefore deemed appropriate.

In addition to the aforementioned argument in support of the patentability of the claims of the present application over the substantive rejection of record, applicant notes the acknowledgement in the Official Action that the addition of the stabilizing agents in original Claim 8 by means of a masterbatch is not taught by the prior art. However, the Official Action argues that masterbatches are conventionally employed to introduce small amounts of additives which have to be added in precise quantities. Since the amounts of copper and halogen may be added in amounts as low as 10 ppm and 50 ppm, respectively, the Official Action concludes that the processing step of mixing these agents in the form of a masterbatch is obvious in the art.

New Claim 25 recites the mixing of at least one copper complex and at least one organic halogen compound by means of a masterbatch. This claim, applicants aver, is not made obvious by the references applied in rejection of the claims of this application. Insofar as it is the disclosure of Dikotter et al. and Nentwig et al. that teaches the addition of these agents individually to a polyamide, their failure to employ or suggest the use of a masterbatch establishes the unobviousness of this processing step.

That small concentration of these constituents may be added does not change the unobviousness of Claim 25. To begin with, the amounts of stabilizer added may be as high as 1,000 ppm and 30,000 ppm copper and halogen, respectively. Thus, it is not necessarily the

case that very small amounts of stabilizer are employed. More importantly, the fact remains that the very references, Dikotter et al. and Nentwig et al., which are relied upon to establish the knowledge in the art of the individual components in the stabilization of polyamide are silent in regard to this application in the form of a masterbatch. This establishes that in the art of polyamide stabilization masterbatch use is unknown. As such, patentability of Claim 25 is established, independent of the aforementioned predicate for patentability, the showing rebutting any presumption of obviousness.

The above remarks establish the patentable nature of all the claims currently in this application. Notice of Allowance and passage to issue of these claims, Claims 14 to 27, is therefore respectfully solicited.

Respectfully submitted,

  
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